

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/052456

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B29C45/72 B29C49/64

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B29B B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 143 225 A (GALT JOHN R ET AL) 7 November 2000 (2000-11-07) figure 8	1,8
A	US 6 299 804 B1 (VLAICU DAN STEFAN ET AL) 9 October 2001 (2001-10-09) figure 1	1,8
A	US 4 836 767 A (POCOCK JOHN ET AL) 6 June 1989 (1989-06-06) column 4, line 48 - line 62; figure 1	1,8
A	US 2003/003187 A1 (CORAN MASSIMO ET AL) 2 January 2003 (2003-01-02) claim 1; figures 1,9	1,8
A	EP 0 592 021 A (INTER TOOLING SERVICES BV) 13 April 1994 (1994-04-13) column 5, line 26 - line 57	1,8

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *&* document member of the same patent family

Date of the actual completion of the international search

7 January 2005

Date of mailing of the international search report

14/01/2005

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 6143225	A	07-11-2000	NONE		
US 6299804	B1	09-10-2001	AU	760227 B2	08-05-2003
			AU	5517200 A	17-04-2001
			BR	0014074 A	21-05-2002
			WO	0119589 A1	22-03-2001
			CA	2376670 A1	22-03-2001
			CN	1373703 T	09-10-2002
			EP	1216134 A1	26-06-2002
			JP	2003509237 T	11-03-2003
US 4836767	A	06-06-1989	NONE		
US 2003003187	A1	02-01-2003	IT	PN20000006 A1	26-07-2001
			BR	0017001 A	15-10-2002
			DE	60004404 D1	11-09-2003
			EP	1252007 A1	30-10-2002
			CN	1424960 T	18-06-2003
			WO	0154883 A1	02-08-2001
			ES	2204726 T3	01-05-2004
EP 0592021	A	13-04-1994	NL	9201738 A	02-05-1994
			US	5569476 A	29-10-1996
			DE	69315530 D1	15-01-1998
			DE	69315530 T2	04-06-1998
			EP	0592021 A1	13-04-1994

PATENT COOPERATION TREATY

PCT

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 4390PTWO/AG/1a	FOR FURTHER ACTION	See Form PCT/PEA/416
International application No. PCT/EP2004/052456	International filing date (day/month/year) 06.10.2004	Priority date (day/month/year) 07.10.2003

International Patent Classification (IPC) or national classification and IPC
B29C45/72, B29C49/64

Applicant
S.I.P.A. SOCIETA INDUSTRIALIZZAZIONE ...

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
 - Box No. I Basis of the opinion
 - Box No. II Priority
 - Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - Box No. IV Lack of unity of invention
 - Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - Box No. VI Certain documents cited
 - Box No. VII Certain defects in the international application
 - Box No. VIII Certain observations on the international application

Date of submission of the demand 25.07.2005	Date of completion of this report 04.10.2005
Name and mailing address of the International preliminary-examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Ingelgard, T. Telephone No. +49 89 2399-7249



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
 - international search (under Rules 12.3 and 23.1(b))
 - publication of the international application (under Rule 12.4)
 - international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-12 received on 05.09.2005 with letter of 31.08.2005

Drawings, Sheets

1/22-22/22 as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
- 3. The amendments have resulted in the cancellation of:
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):
- 4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

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Re Item V.

5.1 The document US6143225 is regarded as being the closest prior art to the subject-matter of claims 1 and 8, and shows:

A conditioning device for plastic preforms comprising a turret, having at least one face provided with a plurality of cavities for conditioning the preforms, the cavities being adapted for holding in their inside said preforms, the turret being fixed to a supporting structure with motor means adapted to make the turret carry out spatial movements; and

A process for conditioning plastic preforms using the device as claimed in claim 1, wherein several preforms are moulded in an appropriate mould comprising several mould cavities where the preforms remain until the plastic reaches a specific consistency and, then, are ejected when they are still warmer than room temperature, the process comprising the following stages:

- a) Transferring the preforms to a location outside the mould,
- b) Inserting the preforms in corresponding cavities of the turret,
- c) Cooling the preforms until they reach a second, predefined temperature,
- d) Making the turret pivot around a substantially horizontal axis.

The subject-matter of claims 1 and 10 differ from the known device and method in that:

- said turret has a structure comprising a first bar in the shape of a parallelepiped, a second bar parallel to the first bar, one or more substantially rectangular plates characterised in that the one or more substantially rectangular plates are exchangeable, have a thickness smaller than that of said first and second bars, are supported at one end by the first bar, at a second end by the second bar and are comprised in said at least one face; and

- that there are provided the stages of:

- e) making the turret translate vertically to a lower position,
- f) removing the preforms from the cavities by means of gripping means provided on an unloading table.

The subject-matter of claims 1 and 8 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as how to provide a structurally strong turret, a turret designed in a modular way allowing preforms having

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different dimensions and to allow different numbers of preforms.

The solution to this problem proposed in claims 1 and 10 of the present application is considered as involving an inventive step (Article 33(3) PCT) as the solution provided by claim 1 is neither known nor fairly suggested by the prior art.

5.2 Claims 2-7 and 9-12 are dependent on claims 1 and 8, and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VII.

7.1 According to the requirements of Rule 10.2 PCT, the terminology shall be consistent throughout the application. This requirement is not met in view of the use of the expressions in the claims compared to the corresponding parts of the description (ie the statement of the invention). Preferably exactly the same terminology is used everywhere. If possible this terminology should correspond to the terminology used in the priority documents if not leading to clarity problems.

7.2 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents US6143225 and US2003/003187 A1 is not mentioned in the description, nor are these documents identified therein.

05. 09. 2005

(82)

NEW SET OF CLAIMS

1. A conditioning device for plastic preforms (5) comprising a turret (6), having at least one face (6', 6'') provided with a plurality of cavities (7) for conditioning the preforms (5), the cavities (7) being adapted for holding in their inside said preforms (5), the turret being fixed to a supporting structure with motor means adapted to make the turret carry out spatial movements, characterised by the fact that said turret (6) has a structure comprising a first bar (18) in the shape of a parallelepiped, a second bar (19) parallel to the first bar, one or more substantially rectangular plates (14, 17) characterised in that the one or more substantially rectangular plates (14, 17) are exchangeable, have a thickness smaller than that of said first (18) and second (19) bars, are supported at one end by the first (18) bar, at a second end by the second bar (19) and are comprised in said at least one face (6', 6'').
15. 2. A device as claimed in claim 1, wherein the preforms (5) define a neck and the conditioning cavities (7) are provided with means (10', 10'') suitable for holding the preforms (5) with the neck facing a downward position.
3. A device as claimed in claim 2, wherein said spatial movements comprise a first movement of rotation around a substantially horizontal axis (X) and a second translation movement between a first position at the height of the means (3) for extracting the preforms from the mould and a second position near a device (23) for extracting the preforms (5) from the cavities (7).
20. 4. A device as claimed in claim 3, wherein the axis of rotation (X) is horizontal and is essentially orthogonal to a direction (C) for conveying the preforms (5) away from a mould.
25. 5. A device as claimed in claim 4, wherein the extracting device is placed under said lower second position of the turret (6), and is provided with gripping means suitable for extracting the preforms from the cavities (7) of the turret (6).
6. A device as claimed in claim 1 or 5 wherein said plates (14, 17) are more than one and each plate (14, 17) supports several cavities.
30. 7. A device as claimed in claim 6, wherein the first bar (18) houses ducts suitable for conveying the working fluids.
8. A process for conditioning plastic preforms (5) using the device as claimed in

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AMENDED SHEET

05/09/2005

claim 1, wherein several preforms are moulded in an appropriate mould comprising several mould cavities where the preforms remain until the plastic reaches a specific consistency and, then, are ejected when they are still warmer than room temperature, the process comprising the following stages:

- 5 a) Transferring the preforms to a location outside the mould,
- b) Inserting the preforms in corresponding cavities (7) of the turret (6),
- c) Cooling the preforms (5) until they reach a second, predefined temperature,
- d) Making the turret (6) pivot around a substantially horizontal axis characterised in that there are provided the stages of :
- 10 e) making the turret (6) translate vertically to a lower position,
- f) removing the preforms (5) from the cavities (7) by means of gripping means provided on an unloading table (23).
9. A process as claimed in claim 8 wherein the turret (6) is equipped with a number of cavities that is a multiple of the plurality of injection mould cavities and
- 15 where the cooling stage c) is a multiple of the injection cycle.
10. A process as claimed in claim 8 wherein the extraction of the preforms (5) from the cavities (7) is carried out through gripping, using the width constrictions of slits provided in the unloading table suitable for inserting into specific portions of the preforms.
- 20 11. A process as claimed in claim 9, wherein the width constrictions of the slits are in the shape of teeth.
12. A process as claimed in claim 10, wherein the preforms are preforms and the teeth are inserted between a ring (9) placed near the neck of the preform (5) and the end of the holder (7) housing said preform.

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